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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/634,171	08/09/2000	Emanuel Israel Cooper	13521(ARC9-2000-0067-US1)	5758

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EXAMINER	
SHEEHAN, JOHN P	

ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 09/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/634,171	COOPER ET AL.
	Examiner	Art Unit
	John P. Sheehan	1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 28-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 28-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1 to 10 and 28 to 30 are rejected under 35 U.S.C. 103(a) as obvious over Kakuno et al. (Kakuno, cited in the IDS submitted by the applicants on October 24, 2000) taken in view of the admitted known prior art disclosed on page 2, lines 25 to 27 of the applicants' specification and Mallary (US Patent No. 4,695,351, newly cited on the PTO Form-892 attached to this Office action).

Kakuno teaches specific examples alloys having compositions that are encompassed by the alloy composition recited in the instant claims (see Kakuno, page 3223, Figures 1 and 2; page 3224 Figure 3 and Table 1, Alloys 7 to 9). Kakuno teaches that these alloys have a very shiny surface (page 3223, left column, line 10) which is considered to be the same as the "substantially smooth bright surface" recited in claim 30 (line 3). Kakuno teaches that these alloys are made by electroplating to a thickness of 0.3 μm (page 3222, right column, under the heading, "Experimental ", the first paragraph). Electroplating is the same process disclosed by applicants to make the instantly claimed alloy film. Further, Kakuno teaches electroplating using a current

density of 10 to 50 mA/cm^2 (page 3223, left column, lines 1 to 5) which overlaps applicants' disclosed current density of 3 to 40 mA/cm^2 and applicants' preferred current density of 5 to 30 mA/cm^2 and completely encompasses applicants' most preferred current density of 10 to 20 mA/cm^2 (see instant specification, page 15, lines 25 to 32). Thus, Kakuno's alloys have compositions that are encompassed by the instant claims and are made by electroplating employing the same process conditions as applicants' disclosed method of making the claimed alloy films.

The claims and Kakuno differ in that Kakuno does not teach the following properties recited in the applicants' claims;

"being substantially free of oxygen and iron oxide",

"anisotropic",

"having a saturation magnetization of at least about 2.3 Tesla" (as recited in claims 1 to 10 and 28 to 30, emphasis added by the Examiner)and

In the specification at page 2, lines 25 to 27 it is disclosed that it is essential that a Co-Fe film be anisotropic in order to used in a magnetic head.

Mallary teaches that it is known to induce magnetic anisotropy in electro-deposited magnetic films by electrodepositing the film in a magnetic field (Abstract and column 2, line 65 to column 3, line 3 and column 3, lines 20 to 30).

One of ordinary skill in the art at the time the invention, knowing that it is essential that a Co-Fe film be anisotropic in order to used in a magnetic head (as disclosed in the applicants' specification, page 2, lines 25 to 27) would have been motivated to apply a magnetic field to Kakuno's electro-deposition process so as to

induce the required anisotropy in the Co-Fe alloy film as taught by Mallary. Further, in view of the fact, that Kakuno's specific example alloys have compositions that are encompassed by the instant claims and are made by electroplating just as applicants' claimed alloys, using current densities that encompass applicants' preferred current densities, Kakuno's alloys would be expected to posses all the same properties as recited in the instant claims, In re Best, 195 USPQ, 430 and MPEP 2112.01.

> "Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada,15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best,195 USPQ 430, 433 (CCPA 1977)." (emphasis added by the Examiner) see MPEP2112.01.

Finally, with respect to the claim limitation, "being substantially free of oxygen and iron oxide", (emphasis added by the Examiner) it is the Examiner's position that use of the term "substantially" does not preclude the presence of some oxygen and iron oxide as taught by Kakuno (Page 3225, left column lines 1 to 3).

Response to Arguments

Applicant(s) arguments submitted June 14, 2004 have been considered but have been found non-persuasive.

3. The declaration under 37 CFR 1.132 filed June 14, 2004 is insufficient to overcome the rejection of claims 1 to 10 and 28 to 30 as set forth in the last Office action because:

I. The claims recite a maximum Fe content of 75 wt% (claim 1, last line). However, in the paragraph bridging pages 8 and 9 of the declaration the inventive alloy prepared for the purpose of the declaration is described as containing 76 wt% Fe (page 8, the last line). Since this example alloy contains more than the claimed maximum amount of Fe this alloy does not represent the claimed invention. Accordingly, this alloy cannot be used as a basis for comparison between the prior art alloy and the applicants' claimed alloy.

II. In the last paragraph on page 9 of the declaration applicants refer to "the inventive CoFe film comprising Fe at 64 wt%". Since the only mention of an inventive alloy to this point in the declaration has been an alloy containing 76 wt% Fe (discussed in I above) it is not apparent where this alloy containing 64 wt% Fe came from and how it was produced.

III. In this same paragraph bridging pages 9 and 10 of the declaration applicants state that Kakuno's alloy was very brittle after annealing which indicates a high impurity level while applicants' alloy is still in tact after annealing. Applicants' appear to be implying that their claimed alloy would thus have less impurities. This is not persuasive. Applicants' description of Kakuno's alloy as containing a "high impurity content" is a relative term that does not distinguish over the applicants' claimed film. It is pointed out that the applicants' claims

recite "substantially free of oxygen and iron oxide" (claim 1, line 3, emphasis added by the Examiner). In view of the use of the term "substantially" applicants' claims do not preclude the presence of oxygen and iron oxide. Further, there are no other limitations in the claims that attempt to limit the impurity levels in the claimed alloy film. Thus, the level of purity of applicants' claimed alloy does not distinguish over Kakuno's alloy. It is not clear that Kakuno's alloy and the inventive alloy were annealed at the same temperature, so whether an alloy is "intact" or "very brittle" is not necessarily a function of the impurity level but rather could also be a function of the annealing temperature. There are no objective measurements of the brittleness or impurity levels of the alloy films, without objective measurements a comparison of the 2 alloys is virtually meaningless. In this section of the declaration applicants' have based their discussion on an inventive alloy and a Kakuno alloy containing 64 wt% Fe. Applicants also refer to Kakuno's Figure 5 as showing cracks, however, the alloy in Kakuno's Figure 5 does not contain 64 % Fe and thus the inclusion of Kakuno's Figure 5 in this section of the declaration is not proper. In this paragraph applicants refer to Exhibits 2 and 3. It is noted that there are no exhibits labeled as Exhibit 2 or Exhibit 3.

IV. In the first full paragraph on page 10 of the declaration applicants state that magnetic moment for Kakuno's alloy containing 64 % Fe is 2.2 Tesla while for applicants' alloy containing 64% Fe is 2.4 Tesla and then state the resistivity of the respective alloy films. This is not persuasive. Again, since there is no

description of making an inventive alloy containing 64% Fe for the purpose of this declaration it is not clear how applicants' alloy containing 64% Fe was prepared for the purpose of the declaration. Further, it is not clear how applicants arrived at the stated values for the magnetic moment and resistivity. Applicants' claims are silent with respect to magnetic moment and with the exception of claim 6 are silent with respect to resistivity, so an alleged difference in these properties does not lend patentability to the claimed invention. If it is assumed that applicants intended "saturation magnetization" as is recited in the applicants' claims, then it is the Examiner's position that, in view of the use of "about" in the claims language, "about 2.3 Tesla" (emphasis added by the Examiner) the claims do not distinguish over alloys having a saturation magnetization of 2.2 Tesla.

V. In paragraph 10 of the declaration applicants refer to Exhibit 4 as based on the claimed alloy film. However, each of the figures in Exhibit 4 is labeled as Prior Art. Further, the top figure bears the caption that it is directed to Kakuno films while the bottom figure bears the caption, "Figure 4 from Kakuno's paper".

VI. Only 2 alloy films referred to by applicants as inventive alloys are represented in the declaration. One of these alloy contains 76% Fe and as discussed above because the Fe content of 76% exceeds the instantly claimed upper limit of 75% Fe this alloy is not representative of the claimed invention. This leaves a single alloy containing 64% Fe as representative of the claimed invention. In view of this, the Declaration is not considered to be commensurate in scope to the claims, In re Dill 202 USPQ 805 and MPEP 716.02(d). Further,

general superiority cannot be inferred from the results obtained using a single embodiment of the claimed invention, In re Greenfield, 197 USPQ 227, 230 and MPEP 2144.08 (B).

VII. Applicants' discussion of the data reported in the ESCA profiles on page 13 of the declaration is not persuasive in that in the copy of the declaration available to the Examiner all curves on these graphs are solid black lines. In view of this, it is impossible to know which curve represents which element and thus it is impossible to follow applicants' discussion of these results. Further, as set forth above, applicants' claims recite "substantially free of oxygen and iron oxide" (claim 1, line 3, emphasis added by the Examiner). In view of the use of the term "substantially" applicants' claims do not preclude the presence of oxygen and iron oxide. Further, there are no other limitations in the claims that attempt to limit the impurity levels in the claimed alloy film. Thus, the level of purity of applicants' claimed alloy does not distinguish over Kakuno's alloy.

Response to the Applicants' Remarks

Applicants, relying on the principle that,

> "To establish a prima facie case of obviousness of a claimed invention all the claimed limitations must be taught or suggested in the prior art" In re Wilson, 165 USPQ 44 (496 (CCPA 1970)

argue that Kakuno does not disclose;

> (1) a cobalt-iron binary electroplated film;

(2) having "a saturation magnetization of at least about 2.30 Tesla" (emphasis added by the Examiner);

(3) "which is substantially free of oxygen and iron oxide" (emphasis added by the Examiner);

(4) and which is anisotropic.

The Examiner is not persuaded. As set forth in MPEP 2144,

> The rationale to modify or combine the prior art does not have to be expressly stated in the prior art; the rationale may be expressly or impliedly contained in the prior art or it may be reasoned from knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). See also *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (setting forth test for implicit teachings); *In re Eli Lilly & Co.*, 902 F.2d 943, 14 USPQ2d 1741 (Fed. Cir. 1990) (discussion of reliance on legal precedent); *In re Nilssen*, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988) (references do not have to explicitly suggest combining teachings); *Ex parte Clapp*, 227 USPQ 972 (Bd. Pat. App. & Inter. 1985) (examiner must present convincing line of reasoning supporting rejection); and *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993) (reliance on logic and sound scientific reasoning).

In the instant case, the Examiner is not basing the rejection on the premise that Kakuno establishes a prima facie case of obviousness (MPEP 2143.03) but rather the rejection is based on a combination of prior art references and sound scientific reasoning and legal precedent established by prior case law, MPEP 2144.

With respect to applicants' argument that Kakuno does not teach an electroplated iron-cobalt film, it is the Examiner's position that, contrary to applicants' arguments,

Kakuno as set forth in the statement of the rejection does teach an electroplated cobalt-iron film.

Regarding the applicants' argument that Kakuno does not teach an iron-cobalt film "having a saturation magnetization of at least about 2.30 Tesla" it is the Examiner's position that, as set forth above in the discussion of applicants' declaration that, in view of the use of "about" in the claims language, "about 2.3 Tesla" (emphasis added by the Examiner) the claims do not distinguish over alloys having a saturation magnetization of 2.2 Tesla (this value set forth in declaration). Further, as set forth in the statement of the rejection, in view of the fact, that Kakuno's specific example alloys have compositions that are encompassed by the instant claims and are made by electroplating just as applicants' claimed alloys, using current densities that encompass applicants' preferred current densities, Kakuno's alloys would be expected to posses all the same properties as recited in the instant claims, In re Best, 195 USPQ, 430 and MPEP 2112.01.

With respect to applicants' arguments regarding the claim limitation, "being substantially free of oxygen and iron oxide", (emphasis added by the Examiner) it is the Examiner's position that use of the term "substantially" does not preclude the presence of some oxygen and iron oxide as taught by Kakuno (Page 3225, left column lines 1 to 3). Further, there are no other limitations in the claims that attempt to limit the impurity levels in the claimed alloy film. Thus, the level of purity of applicants' claimed alloy does not distinguish over Kakuno's alloy.

With respect to Kakuno's films not being anisotropic, as set forth in the statement of the ejection, one of ordinary skill in the art at the time the invention, knowing that it is essential that a Co-Fe film be anisotropic in order to used in a magnetic head (as disclosed in the applicants' specification, page 2, lines 25 to 27) would have been motivated to apply a magnetic field to Kakuno's electro-deposition process so as to induce the required anisotropy in the Co-Fe alloy film as taught by Mallary.

Conclusion

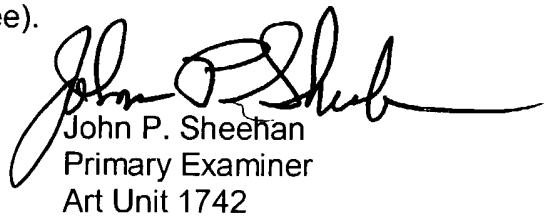
4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Sheehan whose telephone number is (571) 272-1249. The examiner can normally be reached on T-F (6:45-4:30) Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John P. Sheehan
Primary Examiner
Art Unit 1742

jps